

## **Syllabus**

**Course Title: Foundations of Cyber Security**

**Course Number: CIT 330**

### **Course Description:**

Introduces the principles and practices of information security including security models, internal and external security threats, and attacks. Topics include cryptography, network, mobile, host, applications, data, access control, and operational security. Credit may be awarded for CIT 330 or CN 460, not both.

### **Prerequisite Courses:**

CIT 311. Enterprise Systems Architecture.

### **Course Overview**

Through this course, students will begin to understand the security threats and vulnerabilities that face IT professionals and computer network engineers. This course is not intended to be a comprehensive discourse on all security domains, but simply an introduction to these topics. Continued discussion of the security management will be addressed in CIT 331 and will be covered comprehensively by the finish of both courses.

Key concepts to be covered in this course include:

- Ubiquitous security
- Confidentiality, integrity, and availability
- Telecommunications and network security
- Cryptography
- Application and data security
- Access control and identify management
- Vulnerability assessment

### **Course Outcomes:**

Upon completion of this course, learners should be able to:

- Discuss the role of information in the world today along with the importance of protecting that information from unauthorized disclosure.

- Explain the basic concepts involved with cryptography along with its contribution to the authentication and encryption schemes used to secure computer systems and resources.
- Discuss the protection of computer software in both an applications program and an operating systems environment including the identification and elimination of virus software.
- Describe methods used to secure wired and wireless networks from both the many well-known and documented attacks of today as well as those attacks yet to be developed.
- Evaluate the impacts of mobile devices on computer network security
- Explain the importance of access control and authentication

## **Course Materials:**

### *Required Texts:*

Ciampa, M. (2015). *CompTIA Security+ Guide to Network Security Fundamentals* (5th ed.). Boston, MA: Cengage Learning. ISBN-13: 978-1-305-09391-1. ISBN-10: 1-305-09391-7.

American Psychological Association. (2010). *Publication Manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association. ISBN 1433805618, 978-1433805615. Companion website: <http://www.apastyle.org>.

### *Optional Materials:*

## **Pre-Assignment:**

These assignments must be completed by the first night of class:

1. Read Ch. 1 in the textbook.
2. Download the following class files before the first night of class:
  - a. APA Template
  - b. APA citation methods
  - c. APA on-line citation methods
3. Sign on to WorldClass (CIT 330 Home Page) and become familiar with the course.

## Course Assignments and Activities:

	Topics	Readings	Activities Assignments and Associated Points
1	Introduction to Cyber Security	Ciampa, M. (2015). Ch 1	Class Discussion: <ul style="list-style-type: none"> <li>• Introductions</li> <li>• Discussion Questions (20 points)</li> </ul> Security Entrance Exam.
2	Threats and Attacks	Ciampa, M. (2015). Ch 2 & Ch 3	Class Discussion: <ul style="list-style-type: none"> <li>• Discussion Questions (20 points)</li> <li>• Final Project Summary</li> </ul> Written Assignment: Software and Hardware Hacking Tools Paper (70 points).
3	Host Security	Ciampa, M. (2015). Ch 4	Class Discussion: <ul style="list-style-type: none"> <li>• Discussion Questions (20 points)</li> </ul> Written Assignment: CyberAwareness Challenge Paper (70 points).
4	Application and Data Security	Ciampa, M. (2015). Ch 4	Class Discussion: <ul style="list-style-type: none"> <li>• Discussion Questions (20 points)</li> </ul> Written Assignment: Application Security Lab (70 points) Data Security Issues Paper (70 points).
5	Cryptography	Ciampa, M. (2015). Ch 5 & Ch 6	Class Discussion: <ul style="list-style-type: none"> <li>• Discussion Questions (20 points)</li> </ul> Written Assignment: Cryptography Lab (70 points) Networking and Cryptography Paper (70 points).
6	Network Security	Ciampa, M. (2015). Ch 7 & Ch 8	Class Discussion: <ul style="list-style-type: none"> <li>• Discussion Questions (20 points)</li> </ul> Written Assignment: Network Security & Vulnerability Lab (70 points)

7	Wireless and Mobile Security	Ciampa, M. (2015). Ch 9 & Ch 10	<p>Class Discussion:</p> <ul style="list-style-type: none"> <li>Discussion Questions (20 points)</li> </ul> <p>Written Assignment: Wireless and Mobile Security Plan Paper (70 points)</p>
8	Access Control and Identify Management	Ciampa, M. (2015). Ch 11 & Ch 12	<p>Class Discussion:</p> <ul style="list-style-type: none"> <li>Discussion Questions (20 points)</li> </ul> <p>Written Assignment: Final Project Paper and Presentation (210 points). Access Control Paper (70 points).</p>
			<b>Maximum Points Possible: 1000</b>

## Course Policies and Procedures:

### CC&IS Grading Scale

Letter Grade	Percentage	Grade Point
A	93 to 100	4.00
A-	90 to less than 93	3.67
B+	87 to less than 90	3.33
B	83 to less than 87	3.00
B-	80 to less than 83	2.67
C+	77 to less than 80	2.33
C	73 to less than 77	2.00
C-	70 to less than 73	1.67
D+	67 to less than 70	1.33
D	63 to less than 67	1.00
D-	60 to less than 63	.67
F	Less than 60	0

Additional information about grading can be found in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx>.

## CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference. Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx> or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the [U.S. Department of Education](http://www.ed.gov).
- The HIPAA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: <http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx>.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: <http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx>.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation that apply to every course offered by the College of Computer & Information Sciences at Regis University. A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: <https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx>.